

Patent claims US:

1. An erythropoietin (EPO) peptide which essentially comprises amino-acid positions 1 to 35 (P4), 7 to 22 (P4/1), 44 to 78 (P2), 52 to 63 (P3/1), 74 to 109 (P1), 84 to 95 (P1/1), 93 to 137 (P5), 110 to 123 (P5/1), 142 to 166 (P2) or 152 to 166 (P2/1) in accordance with the numbering of the amino-acid positions of natural EPO.

2. An EPO peptide as claimed in claim 1, which is of synthetic origin.

3. An EPO peptide as claimed in claim 1, which has one of the following amino-acid sequences:

P1 VLRGQALLVNS**S**QPWEPLQLHV**D**KAVSGLRSLT**T**LL;

P1/1 SSQPWEPLQLHV;

P3 NEMITVPDTKVNFYAWKRMEVGQQAVEVWQGLALLSEA;

P3/1 KRMEVGQQAVEV;

P4 APPRLICDSRV**L**ERVL**L**EAK**E**AENITTGCAEHCSL;

P4/1 CDSRV**L**ERYL**L**EAK**E**AE;

P5 LHVDKAVSGLRSLT**T**LL**R**ALRAQ**E**AI**S**PPDAASA**A**PLRTITADT;

or

P5/1 RALRAQ**E**AI**S**PPD.

4. An EPO peptide as claimed in claim 1, which has one of the following amino-acid sequences:

P2 FRKLFRVYSNFLRG**K**L**K**LYT**G**EACRTGDR; or

P2/1 KL**K**LYT**G**EACRTGDR.

5. The use of EPO peptides as claimed in claim 1 for the preparation of epitope-specific anti-EPO antibodies, an epitope being defined as being composed of one or more peptides, or one or more sections of peptide sequences.

6. An epitope-specific anti-EPO antibody, which is directed against an EPO peptide as claimed in claim 1, and/or directed against an EPO epitope according to claim 5.

Mark B1
7. An epitope-specific anti-EPO antibody as claimed in claim 6, which is a monoclonal antibody.

Mark C1
8. An epitope-specific anti-EPO antibody as claimed in claim 6, which neutralizes the biological activity of EPO.

Mark D2
9. An anti-idiotype antibody against the binding region of an EPO-neutralizing antibody as claimed in claim 8.

Mark E2
10. The use of the epitope-specific anti-EPO antibodies as claimed in claim 6 for purifying EPO, EPO derivatives or EPO peptides.

Mark F1
11. A diagnostic aid containing an antibody as claimed in claim 6 for the detection of EPO.

Mark G2
12. A diagnostic aid containing an EPO peptide as claimed in claim 1 for the detection of anti-EPO antibodies.

Mark H2
13. A pharmaceutical containing at least one EPO peptide as claimed in claim 1 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

Mark I2
14. A pharmaceutical containing an epitope-specific anti-EPO antibody as claimed in claim 8 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

Mark J2
15. A pharmaceutical containing an anti-idiotype antibody as claimed in claim 9 and, where appropriate, pharmaceutically tolerated auxiliaries and additives.

Mark K2
16. A diagnostic aid containing an anti-idiotype antibody as claimed in claim 9 for the detection of neutralizing antibodies or EPO receptors.

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